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INTERNATIONAL STANDARD

Twinax cables for digital communications – Part 1: Generic specification

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INTERNATIONAL STANDARD

Twinax cables for digital communications – Part 1: Generic specification

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TWINAX CABLES FOR DIGITAL COMMUNICATIONS –

Part 1: Generic specification

FOREWORD

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International Standard IEC 62783-1 has been prepared by subcommittee 46C: Wires and symmetric cables, of IEC technical committee 46: Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
46C/1107/FDIS	46C/1113/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62783 series, published under the general title *Twinax cables for digital communications*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

INTRODUCTION

This International Standard specifies the generic characteristics of twinax cables, which use multiple twinax cable elements for transmission of digital signals.

These cables are intended for use in high-performance information technology systems and data interface interconnection systems. Twinax cables are generally used in short-reach data communication links, which reach about 1 m to 10 m. Information technology interconnection standards that use twinax cables include Ethernet, Fibre channel, SAS, SATA, and others.

IEC 62783 (all parts) includes separate family specifications, which are provided for each information technology interconnection standard’s specific twinax cable requirements.

TWINAX CABLES FOR DIGITAL COMMUNICATIONS –

Part 1: Generic specification

1 Scope

This part of IEC 62783 specifies definitions and requirements of twinax cables used in digital communication systems. These cables are intended to be used in indoor applications. This generic specification details the requirements and transmission characteristics for single twinax elements as well as multiple twinax elements within the same sheath, i.e. “twinax cable”.

This generic specification is supplemented with family specifications that give additional requirements based on the specific application, e.g. the maximum specified frequency of the cables.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60028, *International standard of resistance for copper*

IEC 60068 (all parts), *Environmental testing*

IEC 60189-1, *Low-frequency cables and wires with PVC insulation and PVC sheath – Part 1: General test and measuring methods*

IEC 60304, *Standard colours for insulation for low-frequency cables and wires*

IEC 60332-1-2, *Tests on electric and optical fibre cables under fire conditions – Part 1-2: Test for vertical flame propagation for a single insulated wire or cable – Procedure for 1 kW pre-mixed flame*

IEC 60332-2-2, *Tests on electric and optical fibre cables under fire conditions – Part 2-2: Test for vertical flame propagation for a single small insulated wire or cable – Procedure for diffusion flame*

IEC 60332-3-10, *Tests on electric and optical fibre cables under fire conditions – Part 3-10: Test for vertical flame spread of vertically-mounted bunched wires or cables – Apparatus*

IEC TR 60344, *Calculation of d.c. resistance of plain and coated copper conductors of low-frequency cables and wires – Application guide*

IEC 60708, *Low-frequency cables with polyolefin insulation and moisture barrier polyolefin sheath*

IEC 60794-1-2, *Optical fibre cables – Part 1-2: Generic specification – Basic optical cable test procedures – General guidance*